UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

January 23, 2009

In Reply Refer To: WTR-7

Ray Bokelman, General Manager
Chromal Plating Company
1748 Workman Street
Los Angeles, California 90031

Re: September 10, 2008 Clean Water Act Inspection

Dear Mr. Bokelman:

Enclosed is the January 23, 2009 report for our September 10, 2008 inspection of Chromal Plating. Please submit a short response to the findings in Sections 2 through 5, to EPA, the City of Los Angeles, and the Regional Water Quality Control Board, by **February 28, 2009**.

The main findings are summarized below:

1 Chromal Plating qualifies as an existing source job-shop metal finisher regulated under the Federal regulations in 40 CFR 413 for dischargers of less than 10,000 gpd.

2 On-site treatment is not equivalent to the models used in originally setting the Federal standards. Nevertheless, Chromal Plating consistently complies by retaining the necessary qualifications for the abbreviated and less stringent existing source standards. Qualifying as a new source would result in the application of a full list of more stringent Federal standards, which likely would necessitate the installation of model treatment.

3 The monthly self-monitoring is representative over the sampling day and reporting period. Self-certification statements should include copies of the hazardous waste manifests documenting the off-hauling of spents, spent static rinses, and residuals.

I appreciate your helpfulness extended to me during this inspection. I remain available to the City of Los Angeles, and to you to assist in any way. Please do not hesitate to call me at (415) 972-3504 or e-mail at arthur.greg@epa.gov.

Sincerely,

Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Bellete Yohannes, Senior Inspector, City of Los Angeles
David Hung, RWQCB-Los Angeles

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User:	Chromal Plating Company 1748 Workman Street, Los Angeles, California 90031 Existing Source Job Shop Metal Finishing Discharging <10,000 gpd (40 CFR 413 Subparts A and E)
Treatment Works:	City of Los Angeles Hyperion Wastewater Treatment Plant NPDES Permit CA0109991 - California WDRs R4-2005-0020)
Pretreatment Program:	City of Los Angeles, Bureau of Sanitation
Date of Inspection:	September 10, 2008

Inspection Participants:

US EPA:	Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504
RWQCB-Los Angeles:	None
City of Los Angeles:	Bellete Yohannes, Senior Inspector, (323) 342-6046 Mike Lee, Inspector, (323) 342-6187 Hong Mai, Senior Inspector, (323) 342-6175 Giramachew Ayele, Inspector, (323) 225-6184
Chromal Plating:	Ray Bokelman, General Manager, (323) 225-6121

Report Prepared By:	Greg V. Arthur, Environmental Engineer January 23, 2009

1.0 Scope and Purpose

On September 10, 2008, EPA and the City of Los Angeles conducted a compliance evaluation inspection of Chromal Plating Company in Los Angeles, California. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

Chromal Plating is a significant industrial user ("SIU") within sewer service areas administered by the City of Los Angeles whose compliance was assessed as part of an on-going EPA evaluation of industrial users in EPA Region 9 by sector. The inspection participants are listed on the title page. Arthur conducted the inspection.

1.1 Process Description

Chromal Plating is hard chrome plating job-shop for the repair of aerospace and aircraft parts, made of steel, aluminum, copper, stainless steel, and brass. The operations involve a single chrome plating line, wax masking, mechanical abrasion, grinding, and a wash rack. The plating line was installed in 1952.

- Hard Chrome Plating Line A – alkaline clean ($NaOH$), etching (H_2SO_4), acid activation (HCl), alkaline strip ($NaOH/NaCO_3$), acid strip (HCl), chrome plating (CrO_3).
- Masking and Preparation – taping, wax masking, demasking table (boiling water, petroleum distillates), mechanical abrasion, grinding, wash rack.

See Figure 1 on page 15 for a schematic of the configuration and layout of wastewater handling. Also see Table 1 on page 16 for a process tank inventory. Photo documentation of this inspection follows in Section 1.7 on page 5.

1.2 Facility SIC Code

Chromal Plating is assigned the SIC code for electroplating, plating, anodizing, and coloring (SIC 3471).

1.3 Facility Wastewater Sources

Spent Solutions - The imparted contamination from the processing of parts and the progressive drop in solution strength results in the generation of spents. The generation rates depend on bath usage, effectiveness of bath contamination control, and the amount of drag-out lost

into the rinses or to the floor. Chromal Plating indicated that chrome plating solutions are regenerated strictly through additions and thus do not generate spents. The only losses from these "adds-only" solution tanks therefore would be through the drag-out into the rinses or onto the floor. Otherwise, these solution tanks without outlets would foul through contamination or fail through use. All other spent solutions are hauled off-site for disposal as hazardous.

Rinses - Chromal Plating primarily employs one first-stage on-demand overflow, a first-stage static rinse, and spray rinses over the top of the plating and strip tanks. The demasking table generates a washdown and spent boil-out water for discharge to the sewers, as well as dewax distillates for off-site hauling as hazardous. A wash rack generates a wash down.

Fume Scrubber Waters – Fume scrubber blowdown circulates as cooling water through coils in the chrome plating tanks and back to the scrubber. Fume hood and manifold condensate from each of the main chrome plating tanks collects in drip traps that drain to the floor sump for the closed-loop system.

Residuals - Chromal Plating generates spent cleaning, etching, and stripping solutions, spent cartridge filters, and accumulated sludges removed from the floor sump, clarifier, and rooftop fume scrubber.

1.4 Facility Process Wastewater Handling

Discharge - Chromal Plating discharges non-domestic wastewaters to the City of Los Angeles domestic sewers through a single connection designated in this report by permit number as IWD-172548. Domestic sewage discharges through separate connections downstream of the industrial connection. The August 1, 2007 City of Los Angeles permit identifies the final discharge point as the secured sampling facility after the final underground clarifier. The permit lists the average discharge to the sewers to be 1,734 gallons per day ("gpd"). ***See*** Figure 1 on page 15 for a schematic of the configuration and lay-out of the wastewater handling.

Composition - The process-related wastewaters listed in section 1.3 above would be expected to contain copper, chromium, lead, nickel, zinc, acidity, oil & grease, and salts, as well as surfactants, other pollutants cleaned off of parts, and minerals entrained in the water supply.

Delivery - The rinses and wash waters drain by gravity to a sump or to a final clarifier. The sump located in the middle of the shop floor receives the demasking table wash downs, floor spills, and circulating cooling coil waters, in order to feed back into the closed-loop system as make-up. The clarifier receives the lone plating line overflow rinse and wash rack wash down. ***See*** Photos #1, #2, and #3 in Section 1.7 on page 5.

Treatment - Chromal Plating provides minimal treatment, relying instead on source controls, low-production, and a closed-loop reuse system to minimize the generation and maximize the capture of plating shop pollutants before they enter with wastewaters. The treatment for the

wastewaters that discharge to the sewers consists of only a six-stage underground clarifier and pH meters and alarms.

Closed-Loop Reuse - Chromal Plating circulates cooling water from a rooftop wet fume scrubber through coils installed in the chrome plating tanks to a floor sump located in center of the shop floor. The floor sump has a capacity of 4,000 gallons and utilized two return pumps to feed the cooling water as make-up back not only to the fume scrubber but to a demasking table and wax boil-out tank as well. The sump contents first filter through cotton-fiber filled cartridges. Drainage from the demasking table and the wax boil-out tank return to the floor sump. The only apparent and identified losses from this system are evaporation, spent cartridge filters, and the removal of accumulated sludges from the fume scrubber. Chromal Plating indicated that there never has been a loss wastewater from this closed-loop system over the past 25 years. ***See*** Photos #4 and #5 in Section 1.7 on page 5.

Source Controls - Cross contamination of the solution tanks are unlikely since the shop engages in only chromium plating. The chromium tanks are cooled and covered with floating ping pong balls to reduce evaporative losses. The treatment of the reuse water does not involve the addition of chemicals which would accumulate in the system. ***See*** Photo #6 in Section 1.7 on page 5 of this report.

1.5 Sampling Record

Chromal Plating self-monitors semi-annually as required by the City of Los Angeles permit. The City of Los Angeles also collects its own samples quarterly.

1.6 POTW Legal Authorities

City of Los Angeles - The Bureau of Sanitation administers the pretreatment program in the City areas serviced by the regional Hyperion system. The Hyperion wastewater treatment plant operates under the requirements of the State of California, Los Angeles RWQCB's Waste Discharge Requirements, No. R4-2005-0020, issued in 2005. The WDRs, which also function as NPDES permit No. CA0109991, require the implementation of an approved pretreatment program throughout the sewer service area. Under this authority, the City issued permit No.W-172548 authorizing discharge of non-domestic wastewater to the sewers.

1.7 Photo Documentation

Six of the seven photographs taken during this inspection are depicted below and saved as *chromal-01.jpg through -07.jpg.*

Photo #1: Chrome Line - Tank 6B Rinse Overflow
Taken By: Greg V. Arthur
Date: 09/10/08

Photo #2: Parts Preparation Washrack
Taken By: Greg V. Arthur
Date: 09/10/08

Photo #3: Closed-Loop Rinse Reuse Floor Sump
Taken By: Greg V. Arthur
Date: 09/10/08

Photo #4: Chrome Tank Fume Hood Manifolds
Taken By: Greg V. Arthur
Date: 09/10/08

Photo #5: Rooftop Fume Scrubber
Taken By: Greg V. Arthur
Date: 09/10/08

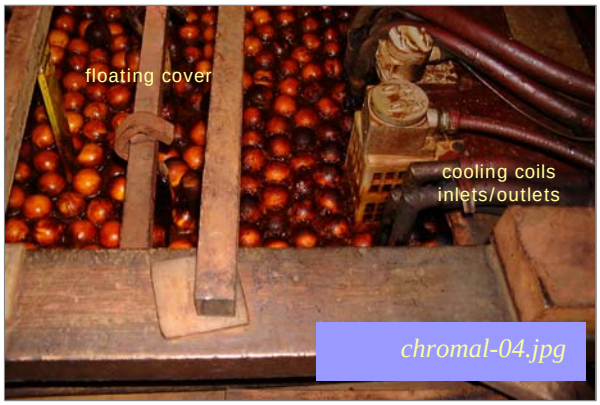

Photo #6: Chrome Tank Source Controls
Taken By: Greg V. Arthur
Date: 09/10/08

2.0 Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, State groundwater, and the local limits (where they exist) must be applied to the sewered discharges from industrial users. (40 CFR 403.5 and 403.6).

Summary

The Federal standards in 40 CFR 413 for existing source job-shop metal finisher discharging less than 10,000 gpd apply to all process wastewater discharges from Chromal Plating through IWD-172548. The City of Los Angeles permit correctly advances the application of the Federal standards and local limits. The application of Federal standards, national prohibitions, and local limits was determined through visual inspection. ***See*** Table 2 on page 16 of this report for the permit limits.

Requirements

- None.

Recommendations

- None.

2.1 Classification by Federal Point Source Category

Chromal Plating qualifies as a job-shop metal finisher subject to the Federal job-shop electroplating standards in 40 CFR 413 Subpart A for existing sources.

New or Existing Sources - Chromal Plating does not qualify as a new source since the metal finishing line was installed in the 1950s. Under the definitions in 40 CFR 403.3(k), a process constructed at an existing source metal finisher after August 31, 1982 is a new source (1) if it entirely replaces a process which caused a discharge or (2) if it is substantially independent of the existing sources on-site. This means that after the 1982 deadline, the new source standards apply to the original installation of metal finishing lines, lines converted to do new operations, and rebuilt or moved lines, including entire lines relocated and re-installed during the installation of secondary containment. New source standards do not apply to the piecemeal replacement of tanks for maintenance in otherwise intact metal finishing lines, nor do they apply to upgraded treatment without altering production lines.

2.2 Local Limits and National Prohibitions

Local limits and the national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-

through of pollutants into the receiving waters or into reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers. The national prohibitions apply nationwide to all non-domestic sewer discharges. The City of Los Angeles local limits apply to non-domestic discharges in the Hyperion service area.

2.3 Federal Categorical Pretreatment Standards
Existing Source Job-Shop Electroplating <10,000 gpd - 40 CFR 413 Subpart A

40 CFR 413 <10k gpd	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO	TM
daily-maximum (mg/l)	1.2	-	-	0.6	-	-	-	-	5.0	4.57	-
four-day average (mg/l)	0.7	-	-	0.4	-	-	-	-	2.7	-	-

Applicability - The Federal job-shop electroplating standards apply to job-shop metal finishers that do not own more than 50% of the parts processed and were in operation in their present configuration before the August 31, 1982 proposal date of the Federal metal finishing rule. This means the job-shop electroplating standards in 40 CFR 413.14(b)(f) for dischargers of less than 10,000 gallons per day apply to all of the process wastewater discharges from Chromal Plating to the sewers through IWD-172548.

Flow Qualifications - The Federal job-shop electroplating standards set limits for an abbreviated list of pollutants standards for dischargers of less than 10,000 gpd. This is an absolute qualification requiring the discharger to never exceed 10,000 gpd. The City of Los Angeles permit correctly applied the abbreviated list since it cites an average discharge of process-related wastewater of 1,734 gpd. The reported flow since 2006 never has exceeded 5,000 gpd which verifies the application of the abbreviated list.

Basis of the Standards – The job-shop electroplating standards were based on a model pretreatment unit that comprises metals precipitation, settling, sludge removal, source control of toxic organics, and if necessary, cyanide destruction and chromium reduction. The best-available-technology ("BAT") standards were set where printed circuit board manufacturers and other job-shop metal finishers with model treatment operated at a long-term average and variability that achieved a compliance rate of 99% (1 in 100 chance of violation). For some facilities qualifying for regulation under the abbreviated list of pollutants, compliance could be reached without treatment when the pollutants are not present.

Adjustments – The Federal categorical pretreatment standards at IWD-172548 do not need to be adjusted to account for multiple Federal categories because all process-related wastewaters qualify for Federal regulation under 40 CFR 413. In addition, under 40 CFR 403.6(d,e), the Federal categorical pretreatment standards do not need to be adjusted to account for dilution since there were no contributions from non-contact cooling waters, cooling tower bleed, and boiler blowdown through the compliance sampling point. The Federal standards in 40 CFR 413.03 also allow facilities with an approved toxic organics management plan to certify instead of sample for toxic organics. The City of Los Angeles approved a toxic organics management plan for Chromal Plating that exempts it from toxic organics self-monitoring. (Permit Part 3.A.1).

Compliance Deadline - Existing source job-shop metal finishers were required to comply with the Federal standards by the final compliance deadline of July 31, 1986.

2.4 Federal Prohibitions

The Federal standards in 40 CFR 403.6(d) and 403.17(d) prohibit dilution as a substitute for treatment, and the bypassing of any on-site treatment necessary to comply with standards, respectively. The City of Los Angeles permit establishes these prohibitions through incorporation of provisions against the dilution as a substitute for treatment (Permit Part 6.B.8) and bypassing treatment necessary to comply (Permit Part 6.C.4).

2.5 Point(s) of Compliance

The permit designates a sampling box just after the underground clarifier as the location of the secured sampling point, designated in this report as IWD-172548.

Federal Standards - Federal categorical pretreatment standards apply end-of-process-after-treatment to all Federally-regulated discharges to the sewers. IWD-172548 is a suitable end-of-process-after-treatment sample point representative of the day-to-day discharge of Federally-regulated wastewaters from Chromal Plating for all parameters.

Local Limits - Local limits and the national prohibitions apply end-of-pipe to non-domestic flows. IWD-172548 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

2.6 Compliance Sampling

The national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples. Federal categorical pretreatment standards are daily-maximums comparable to 24-hour composite samples. The 24-hour composite samples can be replaced with single grabs or manually-composited grabs that are representative of the sampling day's discharge. The City of Los Angeles permit establishes these sampling protocols by specifying the type of sampling required by parameter (Permit Part 3.A.1). ***See*** Section 4.0 of this report on page 12 and Table 2 on page 16.

3.0 Compliance with Federal Categorical Standards

Industrial users must comply with the Federal categorical pretreatment standards that apply to their process wastewater discharges. 40 CFR 403.6(b).

Categorical industrial users must comply with the prohibition against dilution of the Federally-regulated waste streams as a substitute for treatment. 40 CFR 403.6(d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d)

Chromal Plating does not provide wastewater treatment beyond unaided settling and waste-to-waste neutralization, which together is not equivalent to the models used in originally setting the Federal standards. Nevertheless, Chromal Plating has achieved consistent compliance with Federal standards by retaining the necessary qualifications for the abbreviated and less stringent standards for existing source job-shops. Any process expansion or reconfiguretion qualifying the facility as a new source or increase in the discharge flow over 10,000 gpd would result in the application of a full list of more stringent Federal standards. Against some of these Chromal Plating would not be expected to attain consistent compliance. ***See*** Table 3 on page 17 of this report for a summary of the compliance sampling.

Requirements

- None.

Recommendations

- None.

3.1 Sampling Results

The two year 2006-2008 sample record for Chromal Plating collected from the secured sampling point consists of semi-annual self-monitoring and quarterly sampling collected by the City of Los Angeles. All metals samples were 24-hour composites. The others were grabs.

3.2 Best-Available-Technology Treatment

Chromal Plating does not provide treatment of its discharges beyond the preventive source controls and closed-loop handling of scrubber blowdown. This means Chromal Plating is not designed and operated with treatment equivalent to BAT model treatment. As a result, compliance has entirely to do with which standards apply and not the form and effectiveness of the treatment provided. The average and calculated 99th% peak concentrations of the discharge to the sewers in 2006-2008 were 0.010 and 0.014 mg/l cadmium, 1.195 and 4.195 mg/l chromium, 0.051 and 0.141 mg/l copper, 0.043 and 0.154 mg/l lead, 0.007 and 0.037

mg/l nickel, 0.001 and 0.004 mg/l total cyanide, <0.004 mg/l amenable cyanide, 1.280 and 4.219 mg/l total metals, and 0.024 and 0.097 mg/l total toxic organics.

These sampling results indicate that the statistical probability of violating the Federal standards that currently apply to be essentially 0%. However, if new source standards apply, then the statistical probability would be expected to be ~35% without the installation of treatment to remove chromium. If the existing source standards for dischargers over 10,000 gpd apply, then the statistical probability still would be less than the 1% used in setting the Federal standards. Strengths (+) and weaknesses (-) of the wastewater controls are listed below. ***See*** Table 3 on page 17 of this report for statistical probabilities of future violations.

+ Good secondary containment with no red-staining around the scrubber or outside containment.
+ Isolated closed-loop handling of chromium scrubber blowdown and condensate.
+ Dual continuous monitoring with alarms for pH.
- No treatment of wastewaters through model treatment.
- No dedicated and identified outlet from the closed-loop system.

Small Discharger Existing Source Standards - The abbreviated standards for existing source job-shops in 40 CFR 413 for dischargers of less than 10,000 gpd currently apply. These standards specifically do not regulate chromium. As a result, all samples easily met the applicable Federal standards for cadmium, lead, amenable cyanide, and total toxic organics.

40 CFR 413 <10k gpd	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO	TM
daily-maximum (mg/l)	1.2	-	-	0.6	-	-	-	-	5.0	4.57	-
four-day average (mg/l)	0.7	-	-	0.4	-	-	-	-	2.7	-	-

New Source Standards - If the metal finishing processes are reconfigured or expanded to qualify the facility as a new source, then a more stringent and full list of Federal standards in 40 CFR 433 would apply. In that case, the untreated discharges to the sewer would not be expected to consistently comply with the Federal standards in 40 CFR 433, in particular for chromium and possibly cadmium.

40 CFR 433 PSNS	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO	TM
daily-maximum (mg/l)	0.11	2.77	3.38	0.69	3.98	0.43	2.61	1.20	0.86	2.13	-
monthly average (mg/l)	0.07	1.71	2.07	0.43	2.38	0.24	1.48	0.65	0.32	-	-

Large Discharger Existing Source Standards – If daily discharge to the sewer ever exceeds 10,000 gpd, then an equivalent but full list of Federal standards in 40 CFR 413 would apply. In that case, the untreated discharges to the sewer would still be expected to consistently comply with the full list of Federal standards for dischargers of over 10,000 gpd, as long as the closed-loop system continues to isolated scrubber waters from the sewer discharge.

40 CFR 413 >10k gpd	Cd	Cr	Cu	Pb	Ni	Ag	Zn	CNt	CNa	TTO	TM
daily-maximum (mg/l)	1.2	7.0	4.5	0.6	4.1	-	4.2	1.9	-	2.13	10.5
four-day average (mg/l)	0.7	4.0	2.7	0.4	2.6	-	2.6	1.0	-	-	6.8

3.3 Dilution as a Substitute for Treatment

The Federal standards in 40 CFR 403.6(d) prohibit "dilution as a substitute for treatment" in order to prevent compromising BAT model treatment with dilute waste streams. This prohibition applies when sample results for a diluted waste stream are below the Federal standards and the apparent compliance is used to justify untreated discharge. Two conditions need to be established in order to make a determination of non-compliance. First, some or all of the Federally-regulated wastewaters must discharge without undergoing BAT model treatment or its equivalent. Second, there must be excess water usage within the regulated process.

There is no evidence of dilution as a substitute for treatment since Chromal Plating does not meet both conditions of non-compliance. Although the first condition is met since all discharges are untreated, the second condition is not met since the rinses and washdowns were observed to be either on-demand or static.

3.4 Bypass Provision

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

There were no observed methods of bypassing at Chromal Plating, in particular because there is no BAT model treatment that can be bypassed. However, the inadvertent discharge of spent solution remains a possibility because of the proximity of the chrome solution tanks to the sump that discharges to the sewers. Secondary containment around the washrack and an elimination of long hosing on-site would reduce the possibility of an inadvertent spill.

4.0 Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

The sample record indicates that Chromal Plating complies with all of its local limits for metals, cyanide, organics, pH, and sulfides, and would be expected to comply with the national prohibitions for flammability. ***See*** Table 3 on page 17 of this report. ***Also*** see Sections 3.0 and 5.0 on pages 9 and 14 of this report.

Requirements

- None.

Recommendations

- The final discharge should be continuously self-monitored for pH.

4.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

(1) cause operational interference with sewage treatment or sludge disposal,
(2) pass-through sewage treatment into the receiving waters or sludge,
(3) are in any way incompatible with the sewerage works, or
(4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Hyperion wastewater treatment plant through consistent compliance with its sludge and discharge limits.

4.2 Local Limits for Oxygen Demanding Pollutants and The National Prohibition Against Interference

All samples easily met all local limits at IWD-172548.

<u>High-Strength Organics</u> - The process-related wastewaters discharged to the sewers are not expected to be high enough in organics strength to pose a risk of interference, with the organics strength significantly less than domestic sewage.

Metals and Cyanide - There were no violations of the local limits for arsenic, cadmium, chromium, copper, lead, nickel, silver, zinc, and total or amenable cyanide.

4.3 Local Limits for Toxic Metals, Cyanide, and Other Pollutants and The National Prohibition Against Pass-Through

Metals and Cyanide – There were no violations of the local limits for arsenic, cadmium, chromium, copper, lead, nickel, silver, zinc, and total or amenable cyanide.

Toxic Organics – There are no local limits for toxic organics.

Oil and Grease – There were no violations of the local limits for oil and grease and none are expected in the future.

4.4 Local Limits for pH and Sulfides, and The National Prohibitions Against Safety Hazards and Corrosive Structural Damage

Corrosion - Sewer collection system interferences related to the formation of hydrogen sulfide and the resulting acidic disintegration of the sewers are possible but not expected. The wastewaters discharged to the sewers are not high-strength in biodegradable organics nor acidic in nature. Chromal Plating uses pH monitoring of the influent and effluent of the final clarifier, as well as an alarm system. The pH monitoring is continuous.

Flammability - Flammability would not be expected because sampling shows that the discharges to the sewer entrain negligible amounts of volatile organics.

5.0 Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) and 403.12(h).

Permit Requirements – Chromal Plating has successfully fulfilled the self-monitoring requirements set forth in the city permit. Over the past two years, the sample record shows that Chromal Plating (1) submitted semi-annual sample results for all permit-listed parameters, (2) collected all samples from the designated compliance sampling point, (3) correctly obtained 24-hour composites for metals and grabs for the other pollutants, and (4) followed appropriate chain-of-custody procedures.

Representativeness - The sample record also appears representative of the discharge to the sewers over the sampling day and the six-month reporting period. In particular, sampling as required by the permit is frequent enough to capture the variability expected in the waste-water sources contributing to the discharge. The self-monitoring frequency is already set at the Federal semi-annual minimum. Self-monitoring for pH is appropriately set to continuous given the variable and uncontrolled nature of the wastewaters entering the final treatment unit.

Requirements

- ***See*** Table 2 on page 16 for the self-monitoring and city monitoring requirements for IWD-172548 that would be considered to be representative of the discharge.

Recommendations

- Self-certification statements should include copies of the hazardous waste manifests documenting the off-hauling of spents, spent static rinses, and residuals.

Figure 1
Chromal Plating Company - Configuration and Layout

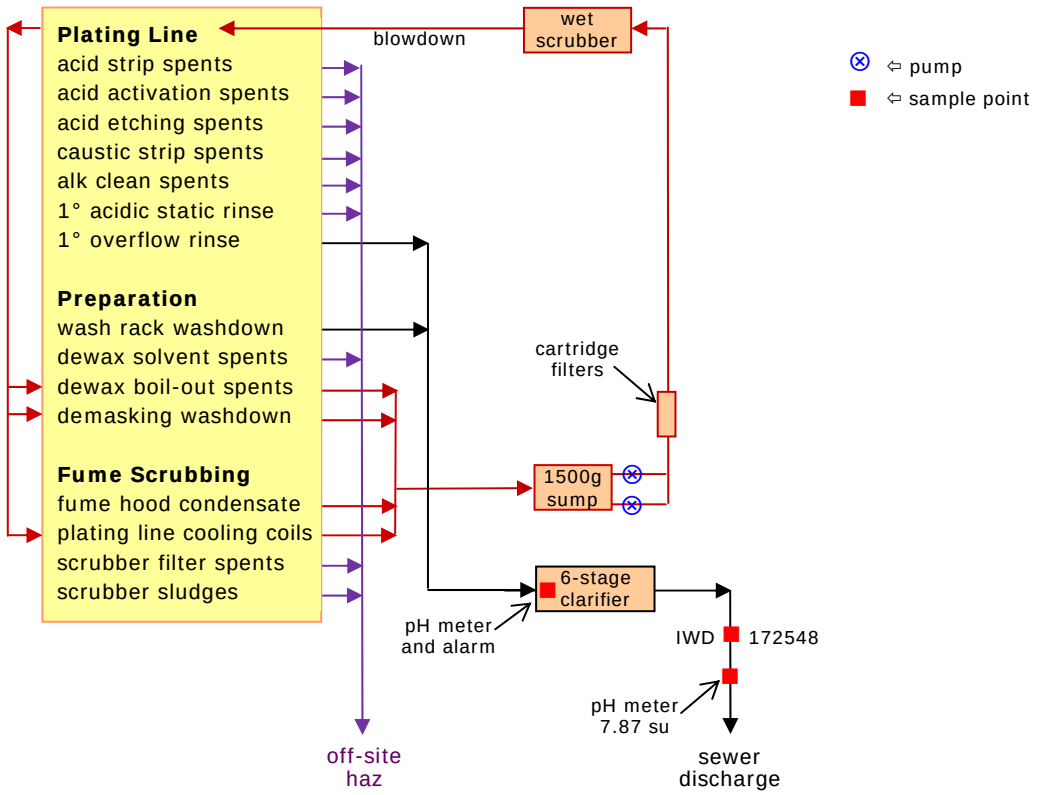

Table 1
Chromal Plating Company - Tank Inventory, Tank Number, and Volume

gals	Hard Chrome Plating Line		gals	Hard Chrome Plating Line	
2400	T1	chromium plating	1100	T6	caustic chrome strip
1500	T2	chromium plating	560	T6A	alkaline clean
6900	T3	chromium plating	560	T6B	1° overflow rinse for T6A T6C
3300	T4	chromium plating	560	T6C	H_2SO_4-acid etching
560	T5	HCl-acid chrome strip	374	T7	H_2CrO_4-acid etching
660	T5A	HCl-acid activation	500	T8	chromium plating
1000	T5B	1° static rinse for T5 T5A	500	T9	chromium plating
			500	T10	chromium plating

Table 2
Sewer Discharge Standards and Limits for Chromal Plating Company @ IWD-172548

Pollutants of concern (mg/l)	Federal standards (d-max)	Federal standards (4d-avg)	national prohibition (instant)	local limits (instant)	monitoring frequency for IWD-172548 ⑥ discharger	city
flow (gpd)	-	-	-	-	1/day	-
cadmium	1.20	0.70	-	15.0	1/six-mos	1/year
chromium	-	-	-	10.0	1/month	1/quarter
copper	-	-	-	15.0	1/month	1/quarter
lead	0.60	0.40	-	5.0	1/six-mos	1/year
nickel	-	-	-	12.0	1/month	1/quarter
zinc	-	-	-	25.0	1/month	1/quarter
cyanide – amenable	5.00	2.70	-	2.0	1/month	1/quarter
total metals	-	-			1/month	1/quarter
total toxic organics	4.57	-	-	-	1/six-mos	1/year
oil and grease - total	-	-	-	600	1/month	1/quarter
pH (s.u.)	-	-	<5.0	5.5-11.0	continuous	1/quarter
arsenic	-	-	-	3.0	③	1/year
chloride	-	-	-	-	③	1/year
dissolved sulfides	-	-	-	0.10	③	1/year
iron	-	-	-	-	③	1/year
molybdenum	-	-	-	-	③	1/year
silver	-	-	-	5.0	③	1/year
cyanide – total	-	-	-	10.0	③	1/year
explosivity	-	-	<140°F ①	②	③	③

① Closed-cup flashpoint
② Narrative prohibition against the introduction of flammable or explosive substances
③ As part of periodic priority pollutant scans in order to identify changes in discharge quality
④ Total metals comprises the sum concentrations for chromium, copper, nickel, and zinc.
⑤ Four-day average standards are compare to the average of four consecutive samples.
⑥ Recommended **reductions in green**. Recommended **increases in red**.

Table 3
May 2006 - July 2008 Sample Record for Chromal Plating @ IWD-172548

pollutants (µg/l)	effluent sampling results				violation rate			sample count
	mean	99th%	min	max	d-max	4d-avg	instant	
arsenic	6.3	14.3	2.7	15	-	-	0/14	14
cadmium	9.6	33.3	1.0	40	0/14	0/3½	0/14	14
chromium	1195.4	4195.1	150	3660	-	-	0/13	13
copper	51.2	141.1	18.0	139	-	-	0/14	14
iron	98.1	195.1	63	201	-	-	-	9
lead	43.4	154.1	2.9	190	0/14	0/3½	0/14	14
molybdenum	15.1	35.9	6.8	34.3	-	-	-	9
nickel	6.9	36.8	2.1	50	-	-	0/14	14
silver	0.3	1.1	<0.1	0.8	-	-	0/14	14
zinc	23.3	74.1	6	81	-	-	0/14	14
total cyanide	1.0	4.0	<4	5.0	-	-	0/14	14
amenable cyanide	<4	<4	<4	<4	0/14	0/3½	0/14	14
total toxic organics	40.0	96.8	<10.0	67.5	0/11	-	0/11	11
dissolved sulfides	<30	<30	<30	<30	-	-	0/14	14
total metals ②	1279.6	4218.7	200	3721	-	-	-	13
chloride (mg/l)	59.5	114.6	33.0	98.8	-	-	-	10
oil+grease - petro (mg/l)	9.1	43.0	<3.0	44.9	-	-	0/14	14
flow (gpd)	3289	7503	480	5000	-	-	-	5
pH (s.u.)	7.37 ①	-	6.90	8.18	-	-	0/13	13
explosivity	-	-	-	-	-	-	-	-

① pH median
② Total metals comprises the sum concentrations for chromium, copper, nickel, and zinc.

violation probability	mean (µg/l)	std dev (µg/l)	statistical probability	percent
Fed 413<10k d-max - chromium	µ = 1195.1	σ = 1287.4	α(n/a) = 0.0000	0%
Fed 413<10k 4d-avg - chromium	µ = 1195.1	σ = 1287.4	α(n/a) = 0.0000	0%
Fed 413>10k d-max - chromium	µ = 1195.1	σ = 1287.4	α(7000) = $0.0^{5}340$	~0%
Fed 413>10k 4d-avg - chromium	µ = 1344.3	σ = 736.1	α(4000) = $0.0^{3}155$	~0%
Fed 433 psns d-max - chromium	µ = 1195.1	σ = 1287.4	α(2770) = 0.1106	~11%
Fed 433 psns mo-avg - chromium	µ = 1191.8	σ = 1321.2	α(1710) = 0.3475	~35%